

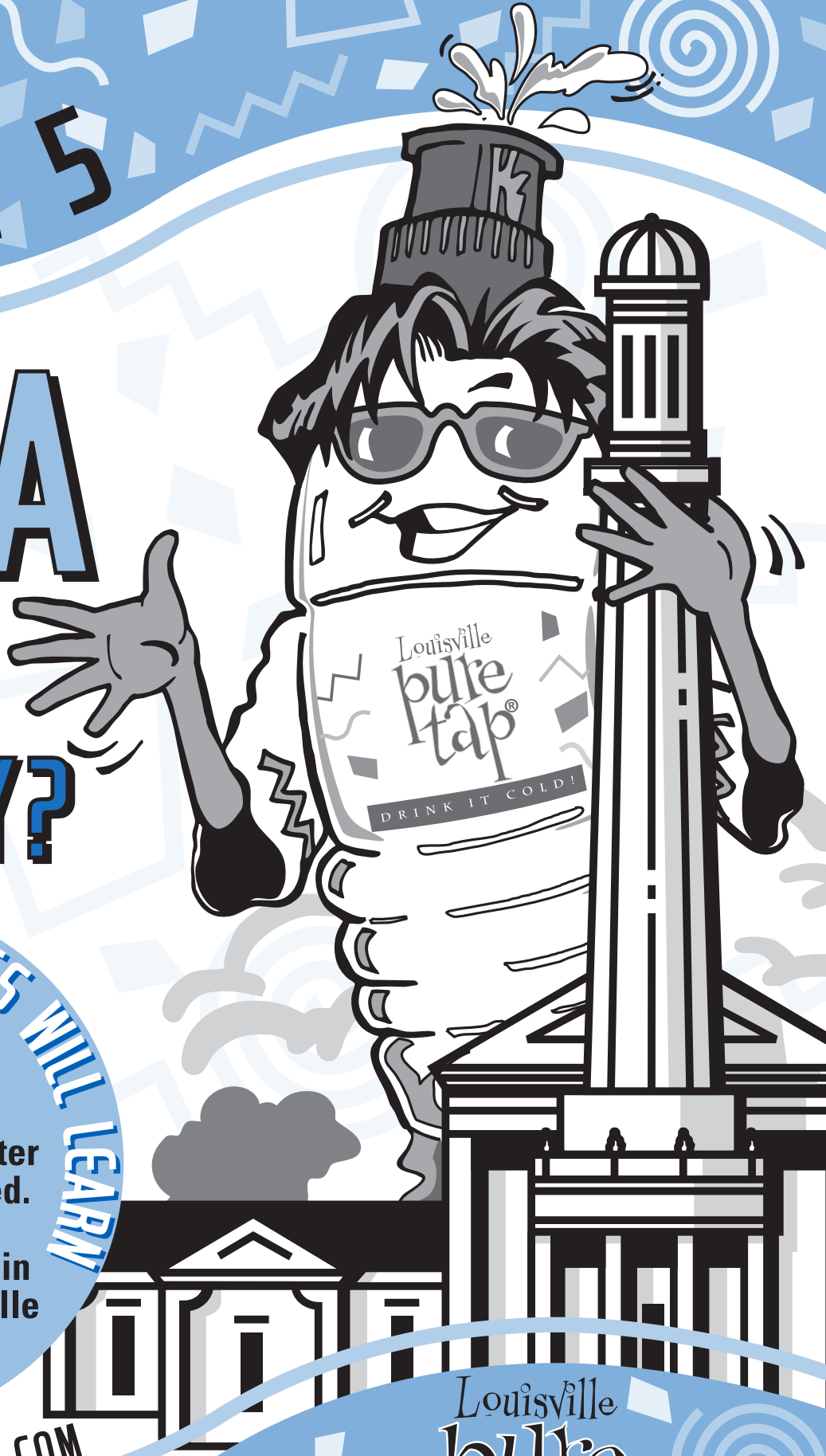
# SECTION 5

## WHY A WATER COMPANY?

**OUTCOME: WHAT STUDENTS WILL LEARN**

- The need for a water utility.
- How Louisville Water Company was formed.
- Significant events in the history of Louisville Water Company.

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# CORE CONTENT STANDARDS

## Writing

WR-E-1.3 Literary Writing

WR-E-1.4 Transactive Writing

## Social Studies

SS-E-3.1.2 Consumers use goods and services to satisfy economic wants and needs.

SS-E-4.3.2 Humans usually settle where there are adequate resources to meet their needs.

SS-E-4.4.1 People depend upon the physical environment for food, shelter and clothing.

SS-E-4.4.2 People adapt to or modify the environment to meet their needs.

SS-E-5.1.2 History can be understood by using a variety of primary and secondary sources and tools.

SS-E-5.2.3 The way we live has changed over time for both Kentuckians and Americans because of changes in many areas.

SS-M-4.1.2 Different factors affect where human activities are located and how land is used in urban, rural, and suburban areas.

SS-M-4.3.2 Human populations may change and/or migrate because of factors such as war, famine, disease, economic opportunity, and technology.

SS-M-4.4.1 Technology assists human modification of the physical environment.

SS-M-5.1.2 Primary sources, secondary sources, artifacts and timelines are essential tools in the study and interpretation of history.

SS-M-5.1.3 History is a series of connected events shaped by multiple cause-and-effect relationships, tying the past to the present.

## Science

SC-E-2.1.2 Earth materials provide many of the resources humans use. The varied materials have different physical and chemical properties, which make them useful in different ways.

# WHY A WATER COMPANY?

## Early Beginnings

The search for pure drinking water dates back to the 13<sup>th</sup> and 15<sup>th</sup> centuries B.C. In 2000 B.C. Egyptian walls contained paintings of men using a siphon to eliminate sediment from the water.



Historically, water was considered clean if it was clear. Today, we know that's not the case. In Rome around 343 B.C. engineers created a water supply system that delivered about 130 million gallons every day through aqueducts. Around the end of the 3<sup>rd</sup> century B.C. Rome, Greece and Egypt created the first public water supply systems.

Two important discoveries led to the future of water treatment: the invention of a high powered microscope in 1660 to see bacteria in water and the development of the "germ" theory in 1883. Until 1883, water engineers didn't understand that bacteria/microorganisms could hide in the water and carry disease.



## Life in the 1800's

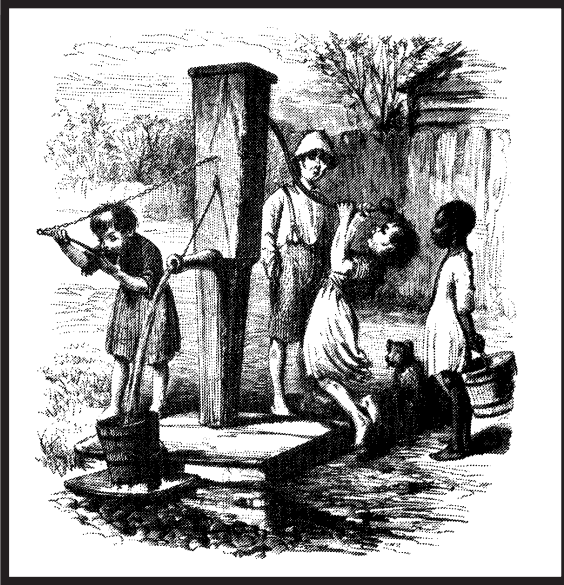
The first water utility to deliver water to an entire town was Paisley, Scotland in 1804.

Louisville was quickly becoming a river town in the early 1800's.

Ships would dock near Portland and transport goods all along the Ohio River.

People who lived in Louisville in the 1800's got their water from a well, a rain barrel or the corner pumps near downtown. The pumps took water from the Ohio River.



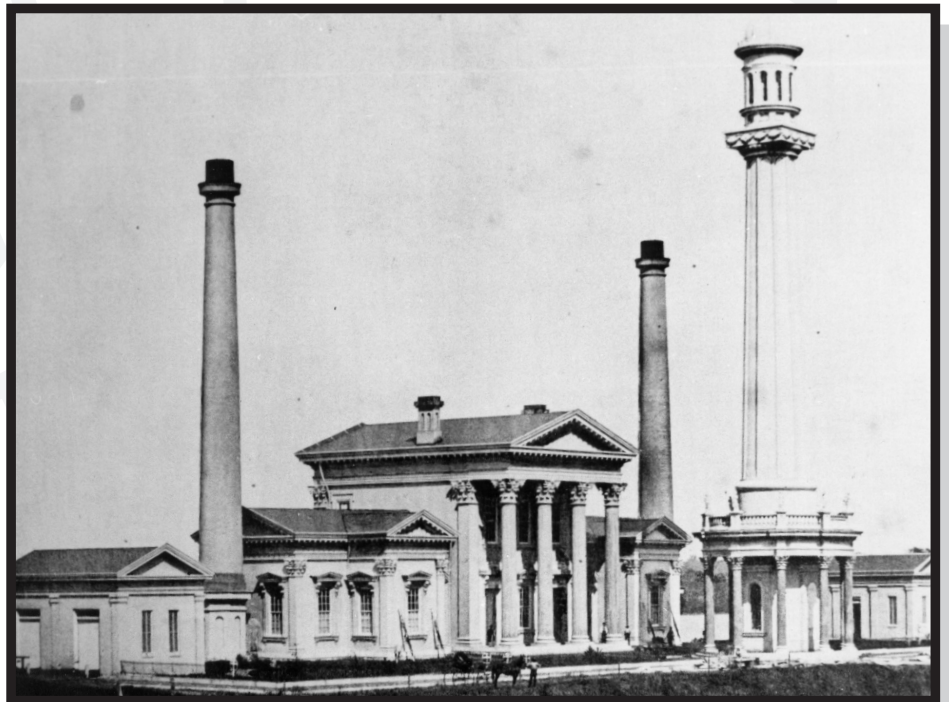


Because Louisville sat next to the Ohio River, water was abundant. That means people could sink **wells** almost anywhere and, presto, they had water. Regardless of how people got their water, they had to carry it by buckets for cooking, cleaning, washing and bathing. But bathing was a luxury, usually reserved for Saturday nights!

The water from the wells and springs was pure. But humans create waste – some of it very harmful. Around 1819, when the first book about Louisville was published, the author called the well water in

Louisville “extremely bad.” It was about this time that epidemics of **cholera** and **typhoid** spread throughout the United States. Many people got the diseases from drinking contaminated water, often well water contaminated by sewage. For people who depended on wells, the problem was the outhouse. Too often what went into the outhouse mixed in the soil with the well water. City leaders began to realize the need for a water utility around 1830, but it was a hard sell. People in Louisville didn’t want to pay for water.

Fire protection was a big factor in getting a water company. The “Great Fire” in Louisville in 1840 destroyed 30 buildings on Main Street. City leaders began a campaign to convince residents that a water utility was necessary for health and safety. Eventually it worked. In 1854, Louisville Water Company received its charter. The city sold stock to raise money for the investment. However, most people still didn’t want the water company so they didn’t buy the stock. The city ended up with most of the stock and became the owner of the water utility. The city chose a site that was upriver from where most people lived and where the town “drained” its sewage into the river.





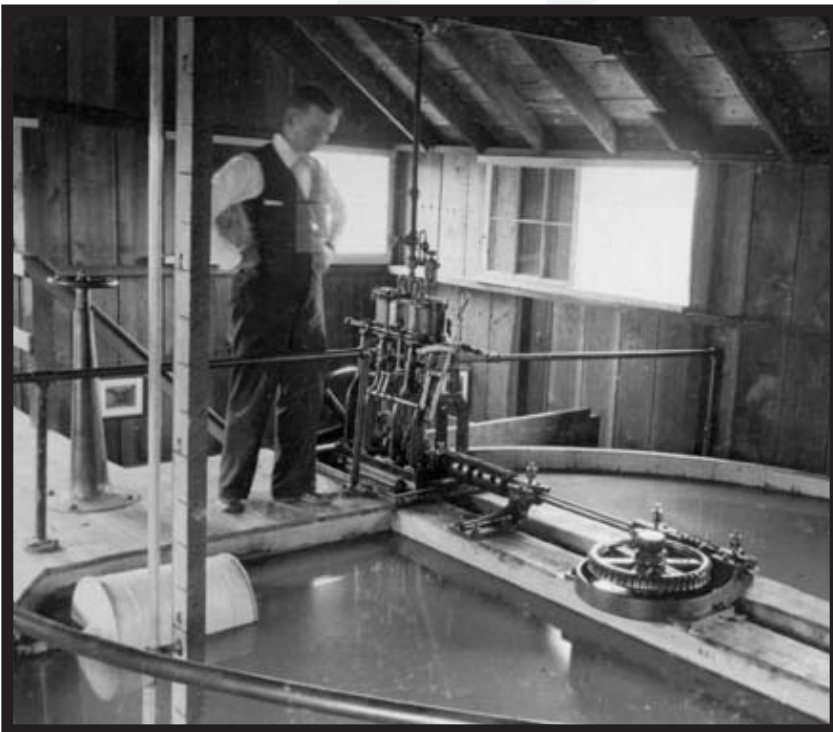
# WHY A WATER COMPANY?



## Louisville Water Company Opens

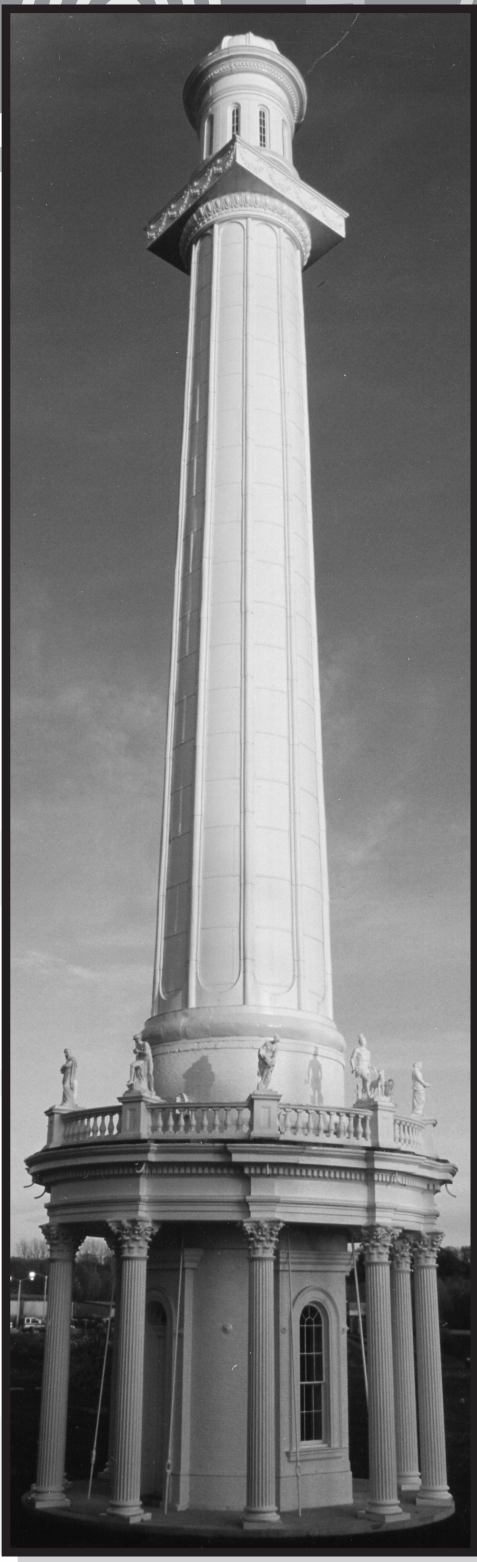
In October of 1860 Louisville Water Company first pumped water. It was a grand event. Families dressed in their Sunday best came to see the "Water Works." Workers put huge cast iron water pipes in the ground to carry the water. A few of those **water mains** are still in the ground today!

The original buildings for Louisville Water Company still stand today at Zorn and River Road. The buildings are no longer used for water production. They are national historic landmarks. The Water Tower stands 160 feet tall. It's a grand tower that had a simple purpose. The tower would fill with water as the steam engines worked. This provided pressure to dampen the thrust of the water that followed each stroke of the pumps. In the beginning, water was drawn from the Ohio River and pumped to a **reservoir**. (The reservoir was where Veterans Hospital stands today.) Mud and sand settled out of the water, and then it traveled through underground pipes to homes and businesses.



## Chlorine and Filtration

In the late 1800's scientists discovered how to better clean the water. In Louisville, Charles Hermany and George Warren Fuller experimented with **filters** and **chlorine** to remove contaminants in the water. They found that a filter made of coal, sand and gravel could remove much of the bacteria and small particles in river water. At the same time, water utilities in England and America did experiments with bleaching powder to disinfect water.



The results of these experiments are very significant. Filters were able to remove about 98% of the contaminants in the water, especially water that was as turbid (or cloudy) as the Ohio River. And chlorine could kill disease carriers in the water. A New Jersey water plant was the first to use regular chlorine to disinfect the water. The next year in 1909 Louisville Water Company put the Crescent Hill Filter Plant into operation. (It's the plant along Frankfort Avenue.) By the 1920's, filtration and chlorination combined with better sewage systems and improved hygiene had virtually eliminated epidemics of waterborne diseases in America. Water utilities realized, more than ever now, the importance of good safe drinking water.

Today, cholera and typhoid are still problems in developing countries. Over 50% of those hospitalized in developing countries are the victims of waterborne diseases.

## Early Days of Louisville Water Company

When Louisville Water Company first began, the company's number one priority was providing drinking water. The company also had a stable of horses and water tanks to water the dirt streets in Louisville, especially during a hot, dry summer.

There were no fire hydrants in those days. To help with fire protection, the water company put a wooden plug in a cistern under the street next to a water main. Firefighters would knock out the plug to get water to fight a fire.

When the city wanted elevators in some buildings, there was a debate over whether the elevators could operate off the pressure the water created in a water main. The water company allowed this on a limited basis.

# WHY A WATER COMPANY?

## Paying for Water

Today, there's a **water meter** at your home or school to measure how much water you use. In 1860, customers paid a fixed rate. An assessor would come to your house and look at how many water fixtures you had, how many people and animals you had to feed, and then calculate your water bill!

As the city grew, so did the water company. The first big expansion was when Churchill Downs opened around 1875.



## Mother Nature and Louisville Water Company

The weather has had a huge impact on Louisville Water Company. In 1890 a tornado snapped the Water Tower at its base. The company rebuilt the tower a few years later.

In 1937, the worst flood in Louisville's history sent the Ohio River rising over its banks. The water flooded the water company's pump stations. Workers used a steam engine on a riverboat to power the pumps.

In 1974, a tornado hit Crescent Hill damaging the treatment plant and the reservoir.

In 1977, the weather was so cold the Ohio River froze over.

In 1997, another flood surrounded the pump station at River Road.







## Today's Louisville Water Company

Louisville Water Company has two important jobs: public health and safety. We provide water to more than 800,000 people in Louisville and Jefferson County and parts of Oldham and Bullitt counties. More than 450 people work at the water company—in jobs ranging from engineers, accountants, customer service representatives, meter readers and scientists.



## Pictorial Display

Go to our web site at [www.louisvillewater.com](http://www.louisvillewater.com). Click on "About Us" to see more historical pictures of Louisville Water Company.

## LWC Video

LWC has produced a documentary highlighting the work to get safe drinking water for Louisville.

Call 569-3600 to receive a copy.

# WATER WORDS

**Chlorine:** a chemical used as a disinfectant.

**Cholera:** a disease caused by a microorganism. Contaminated water can sometimes contain microorganisms.

**Filter:** something that strains things out, separates particles.

**Reservoir:** a collecting point where water can sit or be stored.

**Typhoid:** a serious disease that often enters the body through food or drink. Filtration and/or chlorination of water prevents waterborne typhoid.

**Water main:** a pipe that carries water.

**Water meter:** a device that records water usage.

**Well:** a deep hole drilled into the ground to obtain water, gas or oil.



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# Activity #1: Life in the 1860's

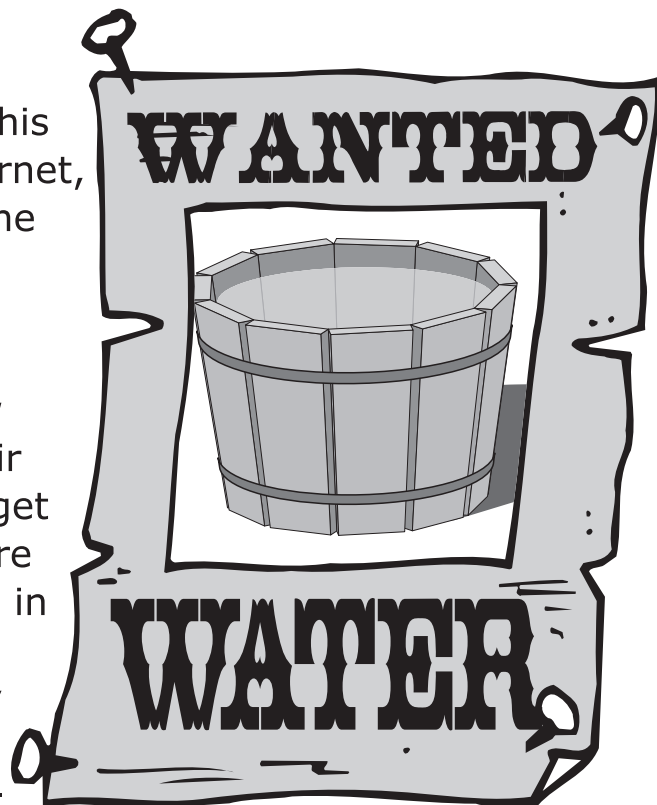
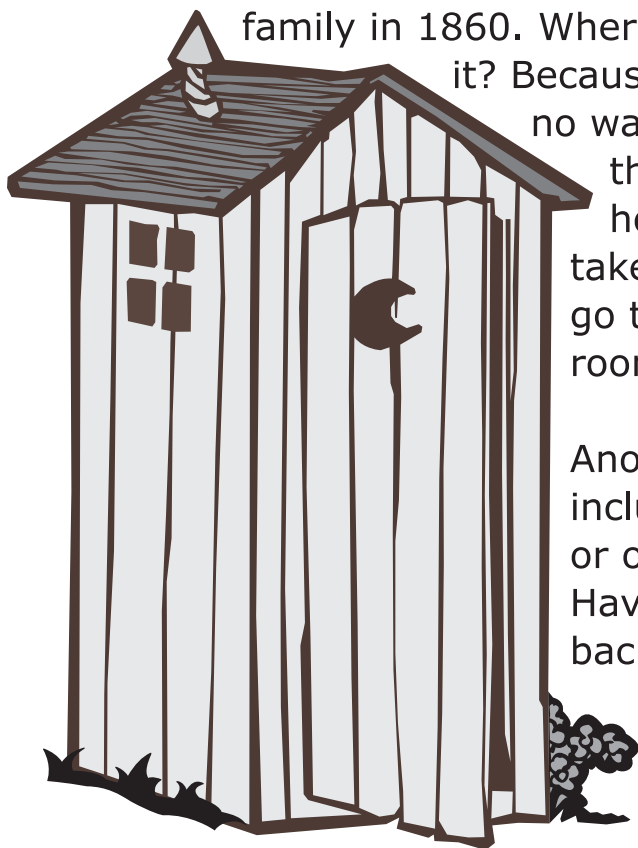
# 1860's

## Objective:

Students will brainstorm and understand what life was like in the 1860's.

This is a writing assignment. Provide students with the history pages from this section. If you have access to the Internet, have students view the pictorial timeline at [www.louisvillewater.com](http://www.louisvillewater.com). (Click on "About Us.")

Have students write a story about how they would have supplied water to their family in 1860. Where did they get it? Because there were no water fixtures in their homes, how did they take a bath or go to the bathroom?

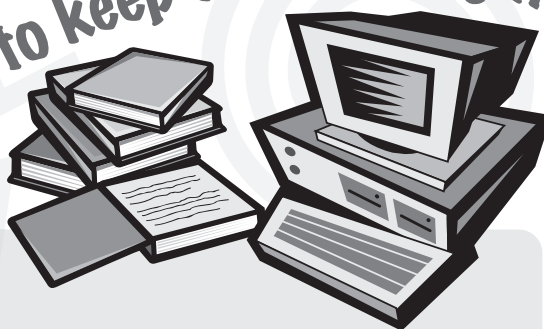


Another portion of this writing assignment could include students talking with their grandparents or other relatives to learn about their ancestors. Have the students try to trace their ancestors back to the 1800's.



# WHY A WATER COMPANY?

Check out these opportunities to keep the learning flowing!



## Books/Videos:

Yater, G., (1996) *Water Works*. Detailed history of Louisville Water Company.

"*Water Works*", documentary that highlights the history of Louisville Water Company. Call 569-3600 and ask for Public Information.

## Web sites:

[www.awwa.org](http://www.awwa.org) Click on "water utility sites" to learn more about water utilities in North America.

## Louisville Water Company Opportunities:

Students will enjoy hearing stories of what life was like in the 1800's. LWC can come to your classroom with pictures, stories and an old-time adventure. Call the Public Information Department at 569-3600.

[www.tappersfunzone.com](http://www.tappersfunzone.com) Click on "Teacher Tools" for a supplement to this section.

# Extra, Extra!!!